

Application No. 10/529,709
Amendment dated April 20, 2009
Reply to Office Action of January 22, 2009
Attorney Docket No. 1217-050897

REMARKS

Information Disclosure Statement

The Examiner has indicated that the Information Disclosure Statement dated November 7, 2005, has not been considered because copies of the references were not provided. In response, Applicants submit herewith a Supplemental Information Disclosure Statement citing one reference, namely, WO 95/09361. The remaining references have been subsequently cited by the Examiner. The second non-patent document cited in Applicants' original IDS is a duplicate of the first non-patent document and need not be cited again.

Claim Rejections

The Office Action of January 22, 2009, has been reviewed and the comments therein carefully considered. The application has been amended. Specifically, new structural features have been added to claims 1 and 5 and new method steps have been added to claim 9. In addition, claims 22 and 23 have been added. Minor changes have been made in several other claims. Support for these amendments can be found throughout the specification and drawings as originally filed, such as in pages 23 and 24 and Figures 1 and 2 of the application as filed. No new matter has been added. Claims 12-15 and 21 have been canceled. Thus, claims 1-11, 16-20 and 22-23 are currently pending.

Claims 1 and 2 stand rejected under 35 U.S.C. §103(a) for obviousness over Japanese Patent Application Publication No. 04-350550 to NGK Spark Plug in view of the article by Norio Sanma et al. entitled "Capacitance-Type Sensor." Applicants further understand the Office Action as extending this rejection to claims 4 and 5 as well based on the discussion on pages 6 and 7 of the Office Action. This rejection is respectfully traversed.

Claims 1 and 5 are directed to an alcohol concentration detecting apparatus. The apparatus includes, among other features, an alcohol concentration detecting apparatus body, a first passage formed in the alcohol concentration detecting apparatus body and connected with an inspected liquid input port, a second passage formed in the alcohol concentration detecting apparatus body and connected with an inspected liquid discharge port, an alcohol content detecting

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chamber formed in the alcohol concentration detecting apparatus body and provided between the first passage and the second passage, and an alcohol concentration detecting sensor. The alcohol concentration detecting sensor is disposed so that a region between the electrodes thereof is located in the alcohol content detecting chamber. Additionally, with respect to claim 1, the alcohol concentration detecting sensor has an alcohol concentration detecting sensor body including a base material resin film, an electrode wiring pattern formed on the base material resin film, and an insulating resin covering a surface of the electrode wiring pattern. With respect to claim 5, the sensor comprises a substrate, an electrode wiring pattern formed on the substrate, and an insulating coat covering a surface of the wiring pattern.

NGK Spark Plug is directed to a ceramics insulation substrate. (Abstract). On the surface of the substrate is formed a pair of electrodes. (Abstract). The electrodes can be screen printed onto the surface of the substrate, and the distance between the electrodes should be constant. (Abstract).

The Sanma article is cited as allegedly teaching that the ratio of methanol in alcohol, and the change in specific inductive capacitance, can be determined by measuring the capacitance between a pair of parallel flat electrodes of known area with a known distance between them. It is additionally asserted that Sanma teaches the use of an oscillation frequency in detecting an alcohol concentration. Sanma is not cited as teaching or suggesting a structure for an alcohol detecting apparatus.

Neither of these cited documents discloses, teaches or suggests an alcohol detecting apparatus having the features recited in claim 1, and particularly the structural features. As discussed above, claims 1 and 5 include, at a minimum, an apparatus body, a first passage formed in the apparatus body and connected with an input port, a second passage formed in the apparatus body and connected with a discharge port, and an alcohol content detecting chamber formed in the apparatus body and disposed between the first passage and the second passage. These features are not present in NGK Spark Plug which appears to be limited to a substrate with a wiring pattern formed thereon. The deficiencies of NGK Spark Plug are not cured by the Sanma article.

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Therefore, Applicants respectfully submit that claims 1, 2, 4 and 5 are not obvious over the NGK Spark Plug publication in view of the Sanma article. Consequently, the rejection of claims 1, 2, 4 and 5 for obviousness over these documents should be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. §103(a) for obviousness over NGK Spark Plug in view of the Sanma article and further in view of U.S. Patent No. 6,296,949 to Bergstresser et al. Claim 3 depends from claim 1 and, thus, includes all of the limitations of claim 1. Claim 3 further defines claim 1 by specifying that the electrode wiring pattern is obtained by selectively etching a conductive metal foil laminated on one of the surfaces of the base material resin film. The Office Action admits that neither NGK Spark Plug nor Sanma teaches a selectively etched wiring pattern. The Office Action then asserts that Bergstresser teaches such a feature. However, as discussed above, the combination of NGK Spark Plug and Sanma does not disclose, teach or suggest many of the claimed features of the apparatus of claim 1, from which claim 3 depends. Reference to Bergstresser does not cure these deficiencies since Bergstresser is related only to printed circuits and does not teach or suggest the features of claim 1 which are not present in NGK Spark Plug and Sanma. Thus, the rejection of claim 3 as obvious over NGK Spark Plug in view of Sanma and Bergstresser should be withdrawn.

Claims 6-19 and 21 stand rejected under 35 U.S.C. §103(a) for obviousness over NGK Spark Plug in view of Sanma, further in view of Bergstresser and further in view of U.S. Patent Application Publication No. 2002/0118027 to Routkevitch et al. Claims 12-15 and 21 have been canceled and, thus, this rejection, as it applies to those claims, is considered moot. As the rejection relates to claims 6-11 and 16-19, this rejection is respectfully traversed.

Claims 6-8 depend from claim 5 and include all of the limitations thereof. As discussed above, NGK Spark Plug and Sanma, whether considered alone or in combination, fail to disclose, teach or suggest the apparatus of claim 5. With respect to claim 6, the Office Action additionally cites Bergstresser and Routkevitch as allegedly teaching a wiring pattern obtained by selective etching and sputtering, respectively. With respect to claim 7, the Office Action asserts that Routkevitch teaches an insulation coating formed by evaporation deposition.

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However, reference to these additional documents does not remedy the failure of NGK Spark Plug and Sanma to render obvious the apparatus of claim 5. Consequently, the rejection of claims 6-8 for obviousness should be withdrawn.

Claim 9 is directed to a method of detecting an alcohol concentration in a liquid using the detecting apparatus of claim 1. The method includes, among other steps, a step of introducing the liquid between the electrodes of the sensor through the inspected liquid input port and a step of discharging the alcohol from the content detecting chamber through a second passage and the inspected liquid discharge port. As discussed above, NGK Spark Plug and Sanma fail to teach, disclose, or suggest an apparatus that has a liquid input port, a content detecting chamber, and/or a liquid discharge port. Thus, it cannot be said that these documents teach or render obvious the method of claim 9. Claim 10 depends from claim 9. Thus, the rejection of claims 9 and 10 should be withdrawn.

Claims 11 and 16 are directed to a method of manufacturing the alcohol concentration detector of claim 1. Claims 17-19 are directed to a method of manufacturing the alcohol concentration detector of claim 5. As discussed above, the apparatus of claims 1 and 5 include features not present in or obvious in view of any of the cited documents. As such, a method of manufacturing these apparatus would not be anticipated by or obvious over the cited documents. Accordingly, the rejection of claims 11 and 16-19 should be reconsidered and withdrawn.

Therefore, Applicants respectfully request that the rejection of claims 6-11 and 16-19 over NGK Spark Plug and Sanma in view of Bergstresser and Routkevitch be reconsidered and withdrawn.

Claim 20 stands rejected under 35 U.S.C. §103(a) for obviousness over NGK Spark Plug in view of Sanma and in further view of Bergstresser, Routkevitch, and U.S. Patent No. 5,337,018 to Yamagishi. This rejection is respectfully traversed.

Claim 20 depends from claim 17. As discussed above, claim 17 is directed to a method of manufacturing the apparatus of claim 5. Because the apparatus of claim 5 is not disclosed, taught or suggested by the cited documents of record, it would not be obvious to manufacture this apparatus in view of the same documents. Consequently, the rejection of claim 20 should be reconsidered and

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withdrawn.

Claims 22 and 23 have been added by this amendment. These claims depend from claims 1 and 5, respectively. For at least the reasons discussed above, it is believed that these claims are also patentable over the cited documents of record. Consequently, allowance of these claims is respectfully requested.

For the foregoing reasons, Applicants submit that the pending claims are patentable over the cited documents of record and are in condition for allowance. Accordingly, reconsideration of the outstanding rejections and allowance of pending claims 1-11, 16-20 and 22-23 are respectfully requested.

Respectfully submitted,

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